

**BEFORE A PANEL OF INDEPENDENT HEARING COMMISSIONERS
APPOINTED BY ENVIRONMENT CANTERBURY AND CHRISTCHURCH
CITY COUNCIL**

IN THE MATTER of the Resource Management Act 1991(the **Act**)

AND

IN THE MATTER of Resource Consent applications CRC242267,
CRC242268, CRC242269, CRC242269 and
RMA/2023/3243 by Christchurch City Council (**the
Applicant**) for Southshore and South New Brighton Park
Estuary Edge Project

**STATEMENT OF EVIDENCE OF THOMAS GEOFFREY PARSONS
ON BEHALF OF CHRISTCHURCH CITY COUNCIL
(PROJECT BACKGROUND)
Dated: 20 November 2025**

Andrew Green / Lisa Wansbrough
Partner / Partner
green@brookfields.co.nz /
wansbrough@brookfields.co.nz
Telephone No. 09 979 2172
P O Box 240
DX CP24134
AUCKLAND

BROOKFIELDS
LAWYERS

1. SUMMARY OF EVIDENCE

1.1 This evidence provides a summary of the events prior to South New Brighton Park Estuary Edge Project (the Project) being initiated. This evidence provides the context for the Project and describes briefly:

- (a) A history of development in Southshore and South New Brighton
- (b) The impacts of the Canterbury Earthquake Sequence of 2010–2011 ('the earthquakes'),
- (c) Responses by the Crown to the earthquakes,
- (d) Flood events, emergency responses and other Council infrastructure responses, and
- (e) Some of the community responses to the above.

2. INTRODUCTION

2.1 My full name is Thomas Geoffrey Parsons.

2.2 My evidence is given on behalf of the Applicant, in my capacity as Senior Surface Water Planning Engineer involved with Christchurch City Council's (CCCs) flood management practices and activities prior the Project being started.

2.3 My evidence relates to the events prior to the Project being started and provides some context for the Project.

3. QUALIFICATIONS AND EXPERIENCE

3.1 I am a Chartered Professional Engineer (CPEng) and International Professional Engineer (IntPE) as administered by Engineering New Zealand. I hold a Bachelors of Engineering Honours Degree (BEng Hons) from the University of Canterbury. I have been practising engineering for over 23 years in the fields of stormwater catchment management, flood management and stormwater and wastewater hydraulic modelling.

3.2 For much of the last twelve years I have been supporting Christchurch City Council plan and deliver its stormwater drainage and flood protection and control works activities. Initially this involved developing the Land Drainage Recovery Programme. This was a post-earthquake flood risk restoration programme which I helped lead from initiation through to nearly 100

investigation projects and a \$50-80M annual construction programme. As part of this work I was involved with flood risk management on the lower Ōtākaro Avon River, South New Brighton and Southshore, including strengthening of the existing Ōtākaro Avon River stopbanks, emergency flood mitigation works in Southshore and South New Brighton, retrospective consenting of the same and planning of the Project. I was also involved with the concept design and the report to CCC to seek a decision to progress the Project.

- 3.3 I am currently supporting CCC on developing two significant stormwater programmes for Christchurch City: the \$800M stormwater and flood protection assets programme in the Ōtākaro Avon River Corridor and the \$180M Surface Flood Reduction Programme. These programmes include a range of stormwater management activities, including leading the development of design guidance, design and construction of stormwater treatment facilities, stormwater networks, flood defences and stormwater pumping.
- 3.4 My involvement with the CCC has extended to other planning activities, such as advice on district plan changes, helping secure the City's Global Stormwater Discharge Consent and supporting CCC's Coastal Hazards Adaptation Planning Programme.

4. CODE OF CONDUCT

- 4.1 Although this matter is not before the Environment Court, I confirm that I have read the Code of Conduct for Expert Witnesses outlined in the Environment Court's Practice Note (2023) (**Code**) and have complied with it in preparing this evidence. I also agree to follow the Code when presenting evidence to the Panel. I confirm that the issues addressed in this brief of evidence are within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses. I also confirm that I have not omitted to consider material facts known to me that might alter or detract from my opinions.

5. SCOPE OF EVIDENCE

- 5.1 This statement of evidence covers the following:
 - (a) A summary of my evidence (see **Section 1** above);
 - (b) **Section 6:** Historic development of Southshore and South New Brighton

- (c) **Section 7:** The range of impacts of the Canterbury Earthquake Sequence in relation to the Project
- (d) **Section 8:** Earthquake responses by the Crown
- (e) **Section 9:** Post earthquake flooding and emergency response
- (f) **Section 10:** Conclusions.

6. HISTORIC DEVELOPMENT OF SOUTHSORE AND SOUTH NEW BRIGHTON

- 6.1 The Brighton Spit is formed by southward migration of sands within Pegasus Bay and has been in various states of deposition and erosion over time. The spit has sand dunes on the seaward side that are elevated above sea level. The western side of Brighton Spit is formed of estuarine deposits and is very low lying, particularly along parts of Rocking Horse Road.
- 6.2 Inspection of historic aerial imagery on the Canterbury Regional Council's web mapping service, Canterbury Maps¹ and the retrolenz.nz website² highlights that by 1926 development of South New Brighton had begun but Southshore was entirely undeveloped. Some houses were present behind South New Brighton Park and Estuary Road extended to its current southmost extent, with some formation of a track along Ebbitide Street but nothing further south. By 1955 Rockinghorse Road had been formed with a scattering of houses either side but the Ihutai Avon Heathcote Estuary ('the estuary') edge was still natural. Some land clearance and / or filling is apparent.
- 6.3 By 1961 South New Brighton was almost fully developed and Southshore was intensifying. The photographs from 1973-75 show quite a different picture for Southshore with estuary edge sections partially developed, structures right at the edge in many locations, side streets are formed, some hardening of the estuary edge and potentially some reclamation. The 1980s and 1990s saw development in Southshore to a level similar to what is present today, with houses built along most of the length across the full width behind the coastal dunes. It is likely that many of the private structures forming the pre-earthquake estuary edge were built in these decades.

¹ <https://mapviewer.canterburymaps.govt.nz/?webmap=4b59862d29d94d51b6affc2ed6eac91e>

² <https://retrolens.co.nz/#/main>

7. CANTERBURY EARTHQUAKE SEQUENCE

7.1 The Canterbury Earthquake Sequence started with the magnitude 7.1 earthquake on the Greendale fault near Darfield in September 2010. This earthquake triggered a series of thousands of earthquakes ('the earthquakes') that dramatically affected Southshore and South New Brighton. The most significant aftershock was in February 2011. The effects on Southshore and South New Brighton were significant, including³:

- (a) Severe liquefaction and lateral spread along the estuary edge including cracking wider than 50mm observed along much of the Southshore estuary edge
- (b) Liquefaction-induced change in ground level of up to 1.5m in Southshore and South New Brighton

7.2 There were a broad range of other direct and indirect impacts of the earthquakes, including^{4,5,6}:

- (a) Direct damage to erosion protection structures at the estuary edge
- (b) Other utilities and infrastructure damage
- (c) Private property damage
- (d) Intangible damage
- (e) Stress on individuals and the community, and a sense of abandonment of the same by authorities

7.3 There were many other impacts individually and collectively, that I do not describe here but acknowledge that they all have, in a variety of ways, led to the Project.

³ Christchurch City Council. (n.d.). Canterbury Liquefaction Information. Retrieved November 16, 2025, from Christchurch City Liquefaction Information Viewer:

<https://apps.canterburymaps.govt.nz/ChristchurchLiquefactionViewer/#>

⁴ <https://www.parliament.nz/en/pb/research-papers/document/00PlibC51211/social-effects-of-the-canterbury-earthquakes>

⁵ Wood, A., Ilan, N., & Miles, P. (2016), *The Canterbury rebuild five years on from the Christchurch earthquake*, November 16, 2025, from <https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/bulletins/2016/2016feb79-3.pdf>

⁶ https://christchurch.infocouncil.biz/Open/2019/05/CNCL_20190509_AGN_3369_AT.PDF

8. EARTHQUAKE RESPONSES BY THE CROWN

8.1 Given the nature of the land damage in Southshore the Crown considered voluntary land purchases, commonly known as 'red zoning'. As described on Wikipedia⁷:

- (a) *"Southshore was initially put into the orange zone before the beach side was zoned green on 29 October 2011. The estuary side remained in the orange zone awaiting a decision whether it was financially worth repairing and rebuilding on that land due to the extensive damage caused by the two main shakes and aftershocks.*
- (b) *In August 2011, residents were informed that they could expect a land zoning decision within six weeks. Later that month, it was announced that the decision would be released in September. In mid-September, the decision was delayed due to "unexpected complexity". On 12 October, Gerry Brownlee as Earthquake Recovery Minister apologised for the delay and asked for another two weeks of patience. In mid-December, Brownlee stated that a decision would be made "prior to Christmas".*
- (c) *One of the last areas to receive a formal red-zoning decision was Southshore. It was publicly released on 18 May 2012, with 198 of the properties zoned red and the remaining 203 properties allowed to be lived in...."*

8.2 Not all property owners offered voluntary land purchase by the Crown accepted the offer. There remain a few 'unsettled' properties within the area, as described by Mr Little.

8.3 Following the purchase of the land by the Crown, the Crown appointed Land Information New Zealand (LINZ) to manage the land on behalf of the Crown and The Canterbury Earthquake Recovery Authority, then Regenerate Christchurch to plan the future use. LINZ set about clearing the land, by removal and / or demolition of the above ground assets and associated foundations. Some of the assets built and maintained along the estuary edge by, presumably, the former owners, were outside the boundaries of the properties purchased by the Crown and so were not demolished, nor maintained. Some of these assets (i.e. privately built seawalls or other forms

⁷ [https://en.wikipedia.org/wiki/Southshore, New Zealand](https://en.wikipedia.org/wiki/Southshore,_New_Zealand), retrieved November 16 2025.

of shoreline protection works, and associated landscaping) were not consented and by location, infer that reclamation had been undertaken.

8.4 Following the earthquakes the condition of these assets has continued to deteriorate over time due to the absence of maintenance, primarily due to disagreement between authorities as to their legality / ownership, responsibility for maintenance and power to act. The degraded state of the assets led to community concerns about health and safety and increased erosion rates. In addition, concerns were raised by the community about the land clearance process and that it may have lowered land levels generally, increasing flood risk. This is expressed in the Council report of 09 May 2019 (Andersen and McRae)⁸, that states (paras 4.15-4.21):

- (a) *“As part of the public feedback opportunities provided by the Coastal Futures Hub, a range of other key themes of importance to the community have been identified by Regenerate Christchurch, including:*
 - (i) *Protection from flooding and coastal erosion*
 - (ii) *Uncertainty about the future, impact and processes*
 - (iii) *Perceived abandonment*
 - (iv) *Distrust of agencies*
 - (v) *Loss of community spaces and places*
- (b) *Christchurch Coastal Residents United (CCRU) prepared a “proposal to Regenerate for a pre Adaptation Strategy for Southshore and South New Brighton” which was publicly released on 20 February 2019, and endorsed by the Coastal Burwood Community Board on 4 March 2019.*
- (c) *The CCRU proposal suggests that the community may be unable and unwilling to continue talking about climate change adaptation while earthquake issues remain due to the impact this is having on social wellbeing. The proposal recommends that:*
 - (i) *Regenerate Christchurch lead the “regeneration” aspect of the project as part of pre adaptation work. This is further*

⁸ https://christchurch.infocouncil.biz/Open/2019/05/CNCL_20190509_AGN_3369_AT.PDF

described as “repairing earthquake damage” and “improving the social wellbeing and resilience of the community”.

- (ii) *Once this is completed and sufficient infrastructure and protection in place, Christchurch City Council could run the adaptation planning process.*
- (d) *CCRU provides eight recommendations for pre-adaptation work which largely focus on:*

 - (i) *Establishing estuary edge protection for flood and erosion risk through repairs, upgrades, and strengthening of existing structures, new works and enhancements to provide a cycle and walkway.*
 - (ii) *Making key decisions about repair and future of South Brighton.*
 - (iii) *Deciding which organisation is leading the process and retaining the How Team links and process.*
 - (iv) *Further investigations into potential funding mechanisms and adaptation to inform next steps.*
- (e) *CCRU has requested that:*

 - (i) *The Council publicly commit to undertaking these works and other initiatives to increase community cohesion and lower stress.*
 - (ii) *Changes to District Plan land use zones are initiated to support the implementation of works.*
 - (iii) *The details of ‘pre-adaptation’ initiatives are developed and agreed between agencies and the affected communities.*
 - (iv) *More work is undertaken to investigate funding mechanisms for adaptation and understand international best practice.*
- (f) *The South Brighton Residents’ Association also wrote to Regenerate Christchurch seeking immediate solutions to earthquake impacts as a critical precursor to engagement on adaptation.”*

- 8.5 As part of this same report a decision was made by Council to take the lead in the regeneration strategy and adaptation planning work. This transferred responsibility from Regenerate Christchurch to Council for short- and long-term planning for the area. This led to a series of actions, as described in the evidence of Mr Little.
- 8.6 During this period LINZ reshaped land within the Southshore Residential Red Zone (RRZ), presumably, in part to address the community concerns about increased flood risk. This reshaping of land formed a low earth structure along much of the length of the Southshore estuary edge which became known as the 'LINZ landscaping feature'. This topsoil bund provides something of a flood defence with the notable exceptions of gaps where LINZ did not have management of the land; at Council owned roads and on private owned properties.
- 8.7 In 2020 the Crown transferred of ownership to the Council. This ended LINZ management of the area.
- 8.8 Away from the RRZ there was damage to Council owned assets through South New Brighton Park. The edge protection assets were severely damaged and dropped in height, resulting in overtopping by waves and erosion of land. Existing trees began to decline, resulting in tree removals and relocation of recreational pathways along the edge.

9. FLOOD EVENTS AND EMERGENCY RESPONSE

- 9.1 There were a number of 'near misses' with elevated estuarine water levels leading up to the widespread tidal flooding on 21 July 2017. Flooding occurred due to overtopping of the estuary edge as flow passed through the gaps in the LINZ landscaping feature and around existing coastal defences at Ebbside Street. During this same event emergency works were conducted by Council in an attempt to prevent ongoing overtopping in subsequent tides. As described in the report to Council of 24 August 2017 (Parsons and Hogan)⁹:
- (a) *Water levels of near to 11 m Christchurch District Datum (CDD) in height were recorded in the Estuary. This level is the highest ever in the 20 years of record at Bridge Street and the 43 years of record at*

⁹ https://christchurch.infocouncil.biz/Open/2017/08/CNCL_20170824_AGN_1296_AT_SUP.PDF

Ferrymead Bridge. The water level resulted from a combination of king tides, long period offshore waves and a significant storm surge.

- (b) *In response to the tidal flooding of 21 July 2017 emergency works were constructed that aimed to significantly reduce the extent of the flooding predicted to occur on the following tide (22 July 2017). The following low points were filled along Southshore (Figure 3):*
 - (i) *Council owned roads (heads of cul-de-sacs) at Penguin Street, Heron Street and Tern Street*
 - (ii) *Over privately owned land at 44A and 78 Rocking Horse Road*
 - (iii) *Through South New Brighton Park in the vicinity of the Estuary Road RRZ*



Figure 3 Emergency Works Near to Penguin Street during Event of 22 July 2017

- (c) *The purpose of the emergency works was not to address erosion of the Estuary edge within South New Brighton Park (Figure 5). Prior to the earthquakes attempts had been made to manage erosion of the Estuary edge using engineered coastal defences (reno mattresses). These defences failed in some areas during the earthquakes through slumping or lateral spreading. This lowered the top of the mattresses and exposed the bank in areas below high tide level to wave action.*

Landward migration of the top of bank is now occurring with some tree loss and the formation of beaches behind the mattresses...



Figure 5 Estuary Edge Erosion within South New Brighton Park

9.2 The report goes on to describe a petition put to Council by local residents following the flood event (Para 5.15):

- (a) *The residents of Southshore write to express our anger and disappointment at the late and inadequate response from Council in relation to flood risk.*
- (b) *The flood events of this weekend highlight what we have been saying to the Council for six and a half years since the earthquake. The previous flood defences on Red Zoned property were demolished and the land scraped and lowered by Red Zone clearance and not reinstated. A new storm water system has been installed to half the community but this inadequate provision is a point of flooding as witnessed in the last few days. Water from the estuary comes up through the drains and floods the street during high tide. Once the high tide has receded the outlets do not allow water to drain out. The temporary bund had gaps in it which lo and behold caused us to flood.*
- (c) *This is a man-made and negligence issue and one that the Council have continued to ignore and deliberately obstruct. We have even offered a solution to try and help which has been met with yet more*

obstruction. Turning up with diggers after we have flooded is appalling. The time for action is now. As residents of Christchurch we urgently need the City Council to show some long overdue leadership on this issue and we seek urgent, effective remedial action rather than “bandaids”.

(d) *The council talk of resilient cities - yet the lack of action by the council is resulting in exactly the opposite and causing immense social upset, mental health issues and stress.*

9.3 Council resolved at the hearing of the report to stabilise the emergency works. In parallel staff worked to gain retrospective consent for the emergency works, which was subsequently granted by the Canterbury Regional Council. These works included making the flood defences more robust, strengthening erosion protection structures at Southshore Road ends and about 44A Rockinghorse Road, and installation of temporary pumping access points, which aimed to facilitate installation of temporary pumps to manage surface flooding during storm events.

9.4 About the same time as this work was undertaken the Ōtākaro Avon Stopbank system was extended south of Bridge Street down to the South New Brighton Park playground, as can be seen today.

9.5 The evidence of Mr Little provides a description of the CCC decision to progress the project and subsequent work. This includes Council activities after the 09 May 2019 report.

10. CONCLUSIONS

10.1 There was significant land damage resulting from the earthquakes. The actions of the Crown and their agents altered the nature of the land adjoining the estuary edge. Subsequently, Councils actions further modified this area, resulting in the infrastructure and landscaping features that can be seen today. These features form the environment in which the Project seeks to improve flood risk and reduce erosion potential.

Thomas Geoffrey Parsons

Dated 20 November 2025